



FACTS

ABOUT THE SAVANNAH RIVER SITE

General Separations Area Consolidated Unit

Background

The final cleanup of one of the highest priority waste areas at SRS and in the DOE complex is well under way, thanks to the aggressive implementation of a Record of Decision issued by the Department of Energy (DOE), the South Carolina Department of Health (SCDHEC) and the Environmental Protection Agency (EPA). Through the agreement, the Old Radioactive Waste Burial Ground (ORWBG), SRS's highest risk remaining surface unit, has been consolidated with three nearby waste units to form the General Separations Area Consolidation Unit (GSACU). Cleanup of these four discrete units is being combined under one remedial action. As a consequence, the action eliminates off-site disposal and saves the taxpayer more than \$150M.

The ORWBG is a 76-acre section of land located, along with the other GSACU waste units, near the center of SRS. The burial ground received radioactive waste from 1952-1972 with a small additional quantity of waste being disposed in 1974. The ORWBG contains over 600,000 curies of radioactive materials and over 93 tons of hazardous waste. The area also contains 22 underground tanks, formerly used to store radioactive solvents. In 1998, SRS installed a soil cover over a majority of the ORWBG to reduce surface radiation levels, reduce storm water infiltration to the waste layer, and mitigate contaminant migration to the groundwater.

Besides the ORWBG, the GSACU consists of: H Area Retention Basin (HRB), Warner's Pond, and HP-52 Ponds. The HRB is a single 200-foot by 120-foot inactive retention basin that, from 1955 to 1972, received contaminated wastewater from chemical separations facilities and from the H Area Tank Farm. Warner's Pond is a 4-acre site centered on an area that was formerly occupied by a 1-acre holding pond.

The pond was constructed in 1956 as an emergency holding pond to receive contaminated overflow from H Canyon. An H Area Inactive Process Sewer Line (HIPSL) runs through the Warner's Pond Area. The HIPSL transported liquid waste from H Area to the H Area Retention Basins and is considered part of the HRB waste unit. The HP-52 Ponds were originally built in response to a spill of radioactive liquid waste in 1967. The two ponds were drained but residual contamination made further cleanup necessary. The HP-52 Ponds waste unit was contaminated as a result of spills in the H tank farm that were contained in this area. These releases were contained and the contaminated soil buried at the HP-52 Ponds location. The contaminated area covers approximately 1.5 acres.

Environmental Concerns

Through the course of its operation as the site's primary disposal area, more than 7 million cubic feet of radioactive wastes were buried at the ORWBG. Most wastes disposed in the ORWBG were placed in drums, cans, cardboard boxes, plastic bags, and metal containers and buried in trenches. Waste included solid radioactive waste produced at SRS, shipments from other DOE facilities, and shipments from the Department of Defense. At one point, approximately 5.1 million curies of radioactivity had been placed in the waste unit. While much of the radioactivity has decayed, a large inventory of radioactive and hazardous substances remains buried in the ORWBG. Characterization of the type and extent of contamination was based on historical

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information augmented by non-intrusive investigation such as ground penetrating radar surveys. This characterization approach was selected to protect worker health and safety at this radiologically contaminated waste site. As a consequence, certain “hot spots” or specific locations containing high concentrations and/or levels of radioactivity were identified: a mercury hot spot, various radioactive hot spots and the Old Solvent Tanks.

Warner’s Pond was contaminated by two highly radioactive spills in 1967 and 1969 in which the primary contaminant was Cesium 137. This left a total of 11,000 cubic yards of soil to be cleaned up. The HP-52 Ponds were also impacted by similar spills and left 12,500 cubic yards for remediation. HRB, on the other hand, needed 10,000 cubic yards of soil contaminated by Cesium 137 and Strontium 90 to be cleaned up.

Environmental Actions and Plans

As noted previously, to address the above environmental concerns, stakeholders developed a remedial strategy which combined the remediation of these inactive units. The consolidation effort involves closing the 22 empty solvent tanks by grouting them in place and then removing and consolidating the highly contaminated soils and material from HRB, WP and HP-52 and placing them at pre-determined locations within the ORWBG. Upon completion of the consolidation activities, the plan calls for an engineered geosynthetic cover system to be placed over the entire ORWBG. The plan also provides for backfilling and covering the excavated areas and installing intruder barriers over persistent hot spots before establishing ongoing protective measures through institutional controls.

Field work on the final closure of the GSACU began in December 2003 and is scheduled for completion in 2008. As of the end of FY05, most of the actions specified above have either been completed or are in process. SRS has completed grouting and closure of the solvent tanks. The project was approximately 50 percent complete on the excavation of more than 45000 cubic yards of radioactive materials and installation of a cover system on the three units farthest from the ORWBG. Construction of the geosynthetic cap is progressing well as the cleanup of what was *formerly* the highest risk inactive waste unit at SRS proceeds.

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